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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/773,465

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EXAMINER

BUTLER, PATRICK NEAL

ART UNIT

PAPER NUMBER

1791

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/773,465	<b>Applicant(s)</b> MORIWAKI ET AL.	
	<b>Examiner</b> Patrick Butler	<b>Art Unit</b> 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 January 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9, 18, 19, 24 and 25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9, 18, 19, 24 and 25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _ _  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____.  | 6) <input type="checkbox"/> Other: _____.                                   |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-9, 18, 19, 24, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishibori et al. (US Patent No. 5,323,971) in view of Gordon et al. (UK Patent Application GB 2 121 535 A).

Regarding claim 1, Nishibori et al. teach a resin material remolding (abstract) method comprising: pulverizing a coated resin molded product (col. 7 lines 30-52), peeling and separating a coating film from the pulverized pieces by simultaneous compression and fine vibration (rubbing) at a predetermined throughput rate (peeling is performed within a predetermined time) (see col. 7 lines 53-59 and col. 25, lines 48-51), screening with a 1.5 mm screen to provide resin for remolding (such that the pulverized pieces maintain a particular diameter of at least a predetermined size) (see col. 25, lines 38-45), and performing molding by using the pulverized pieces having no coating film adhered after separating (col. 23 lines 14 and 15). Nishibori et al. also recognize the strong adhesion strength of the coating film on the resin article and the difficulty of peeling off the film (the coating film removal ratio of peeling does not reach 100%) (col. 2 lines 57-64 & col. 23 lines 15-21) but do not teach a determination step of sensing and determining the presence/absence of adhesion of the coating film for each individual

Art Unit: 1791

pulverized piece after the peeling; separating a pulverized piece having the coating film adhered from pulverized pieces having no coating film adhered, on the basis of the determination result.

Gordon teaches a sorting system wherein desired objects are detected amongst a plurality of objects and separated therefrom (a separation step of separating a pulverized piece having the coating film adhered from pulverized pieces having no coating film adhered) (see page 1, lines 5-11). The sorting system utilizes a detector suitable for detecting the presence of an object with desired characteristics (sensing and determining the presence/absence of adhesion of the coating film for each individual pulverized piece after peeling; wherein the sensing and determining senses and determines the presence/absence of adhesion of the coating film by sensing the coating film itself or a specific material present in the coating film by using a sensor) (see page 1, lines 5-11).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Gordon's detection and sorting system in the method of remolding taught by Nishibori since Gordon's system provides high sorting throughputs of objects of small size (see page 1, lines 17-22) and it obvious to interchange components recognized by the art as being equivalent for the same purpose (See MPEP 2144.06).

Nishibori et al. teach that the coating film is usually resin material of different colors (col. 2 lines 42-46). Thus, one having ordinary skill in the art would be led to use

Gordon's sorting step based at least on color to separate out pulverized powder with coating film from those free of coating.

Regarding claims 2, 3, and 5-7, Nishibori et al. do not teach that the determination step senses and determines the presence/absence of adhesion of the coating film by sensing the coating film itself or a specific material present in the coating film by using a sensor for sensing the coating film on the basis of a difference in lightness, that the sensing is executed for the pulverized pieces in a plurality of directions, and that the determination step executes the sensing in a specific position midway along a moving path in which the pulverized pieces are moved in a specific direction, and the separation step executes the separation, when a pulverized piece having the coating film adhered is sensed in the determination step, by blowing a gas against the pulverized piece during freefall to change a moving direction of the pulverized piece having the coating film adhered to a direction different from a moving direction of a pulverized piece having no coating film adhered.

However, Gordon teaches detecting a characteristic of an object (presence of adhesion of the coating film by sensing the coating film itself or a specific material present in the coating film by using a sensor) (page 2, lines 14-20) from a variety of directions (see variety of angles in Fig. 1). Gordon teaches that the sensing is done in specific positions between the beginning and end of the path (see Figure 1) and the separation is executed by a nozzle array (blowing a gas) in free space (free fall) (see page 3, lines 3-7 and 30-40).

It would have been obvious to one having ordinary skill in the art at the time of invention to modify Nishibori et al's method for resin material remolding to include detecting a characteristic of the material in order to properly sort the object (see Gordon, page 2, lines 56-58) since Gordon's system provides high sorting throughputs of objects of small size (see page 1, lines 17-22) and it obvious to interchange components recognized by the art as being equivalent for the same purpose (See MPEP 2144.06). The frequency of irradiation and response is in the optical region (color) (see Gordon, page 2, lines 36-44).

Regarding claims 4, Nishibori et al. do not teach the sensing is executed by sensing means for irradiating the pulverized pieces with X-rays, and sensing X-rays having a specific wavelength excited from a specific material present in the coating film. However Gordon teaches exciting the material with X-ray for detecting a characteristic of the object (see page 2, lines 14-20 and lines 36-44).

Regarding claims 8 and 18, Nishibori et al. teach that the coated resin molded product is pulverized at random by using a cutting tool having a rotary/stirring blade (col. 12 lines 39-53). Nishibori et al. also teach classifying the pulverized pieces by particle-diameter (fig 13, **255**) but do not teach the determination step. However, Gordon teaches this determination step (page 2, lines 14-20). Therefore it would have been obvious to one having ordinary skill in the art at the time of invention to modify Nishibori et al's method for resin material remolding to include a determination step after step **256** in order to separate out unwanted components.

Regarding claims 9 and 19, Nishibori et al. teach that the coated resin molded product is a used automobile part (col. 2 lines 29-41).

With respect to Claim 24, Nishibori does not appear to explicitly teach that the predetermined time of peeling is within the claimed range (e.g., 15 to 50 minutes).

However, in this regard, Nishibori teaches desired throughput of 80 to 100 kg/hr (see col. 25, lines 48-51), that amount of film removed is 99.5% (see col. 25, lines 45-48), and varying the speed of the motors to obtain film removal for particular processed material (see col. 12, lines 39-45 and col. 13, lines 10-13). As such, Nishibori recognizes that the duration of peeling is a result-effective variable. Since the duration of peeling is a result-effective variable, one of ordinary skill in the art would have obviously been motivated to determine the optimum duration of peeling applied in the process of Nishibori in view of Gordon through routine experimentation based upon the properties of the material being processed, throughput, and desired product attributes.

With respect to Claim 25, Nishibori et al.'s final removal leaves 0.46 to 0.49% by weight film. This is a removal ratio of 99.51-99.54%, which reads of the claimed range of 98.98-99.58% (Claim 25).

### ***Response to Arguments***

Applicant's arguments filed 11 December 2007 have been fully considered but they are not persuasive.

Applicant argues with respect to the 35 USC 103 rejections. Applicant's arguments appear to be on the grounds that:

1) The time and size (diameter) of processing are not predetermined in Nishibori since Nishibori teaches to completely compress until all film is peeled. Thus, the predetermined time limitation of Claim 1 is not met.

2) Since Nishibori's objective is to peel until little or no resin film actually remains, it would not have been a motivation of one of ordinary skill in the art at the time the invention was made to separate out the resin film remaining.

Applicant's arguments are addressed as follows:

1) Nishibori teaches that to provide necessary throughput (see col. 25, lines 48-51), and due to peeling difficulties (see col. 2 lines 57-64; col. 23 lines 15-21, and col. 25, lines 45-48), peeling is not indefinitely performed.

1) Moreover, as combined, Gordon's teaching of separation provides the teaching to sort rather than indefinitely grind until separation.

2) It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Gordon's sorting system since it provides high sorting throughputs of objects of small size (see page 1, lines 17-22) and it obvious to interchange components recognized by the art as being equivalent for the same purpose (See MPEP 2144.06).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Butler whose telephone number is (571) 272-8517. The examiner can normally be reached on Mon.-Thu. 7:30 a.m.-5 p.m. and alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. B./  
Examiner, Art Unit 1791

/Monica A Huson/  
Primary Examiner, Art Unit 1791